FIG.1

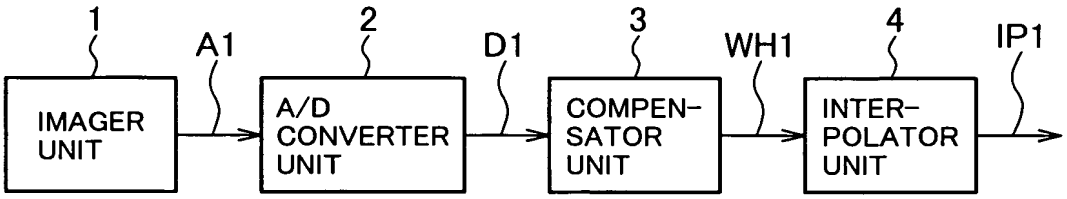



FIG.2

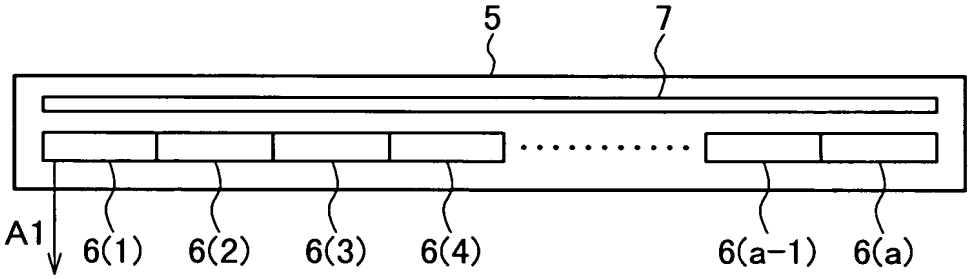



FIG.3

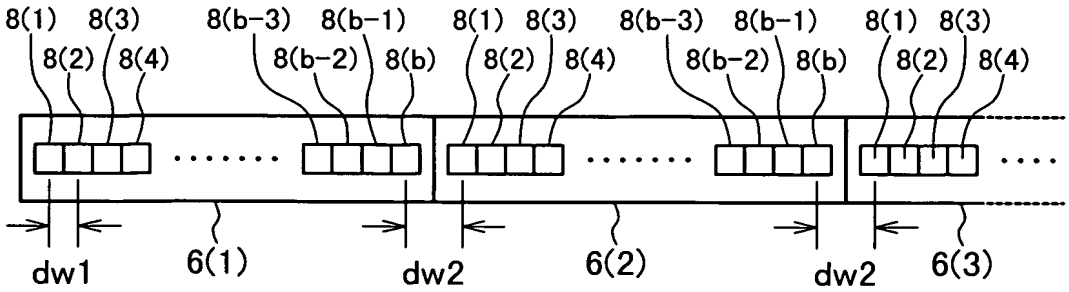


FIG.4

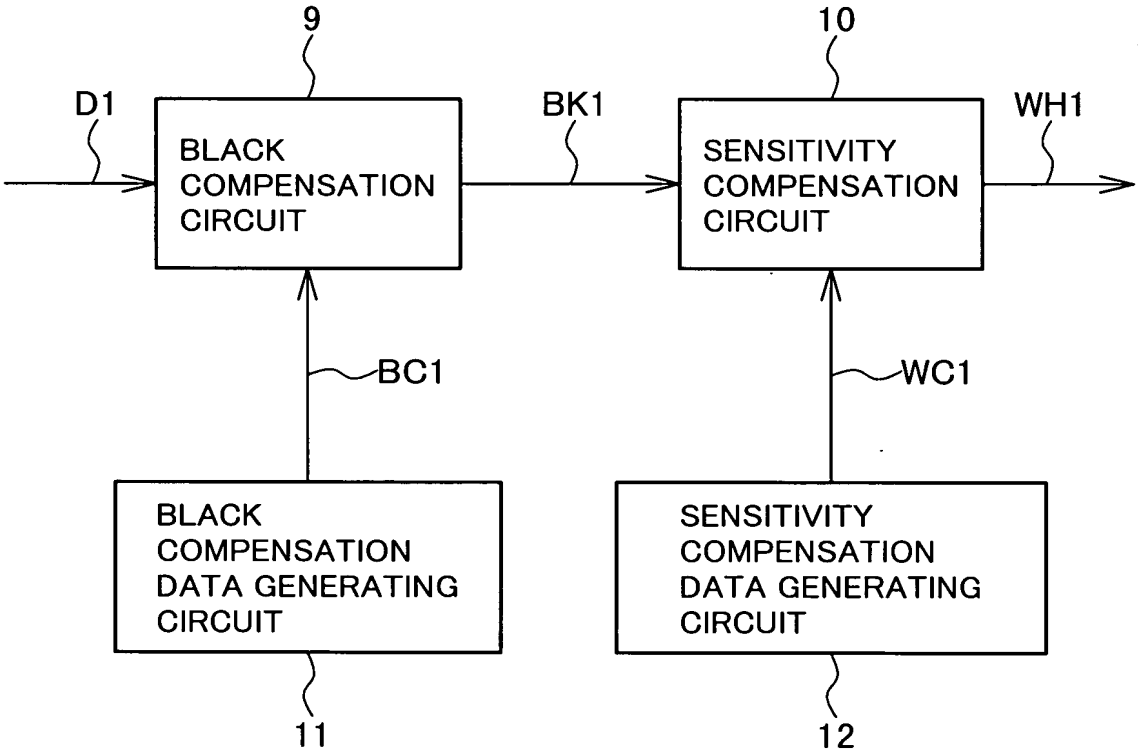

9
10
D1
BLACK COMPENSATION CIRCUIT
BK1
SENSITIVITY COMPENSATION CIRCUIT
WH1
BC1
WC1
BLACK COMPENSATION DATA GENERATING CIRCUIT
SENSITIVITY COMPENSATION DATA GENERATING CIRCUIT
11
12

FIG.5(a)

FIG.5(b)

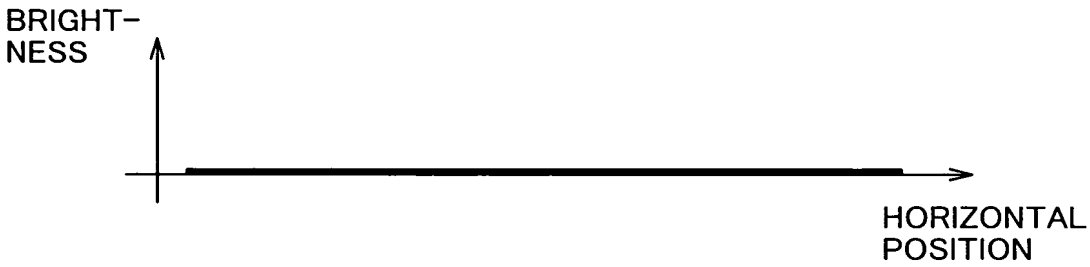



FIG.5(c)

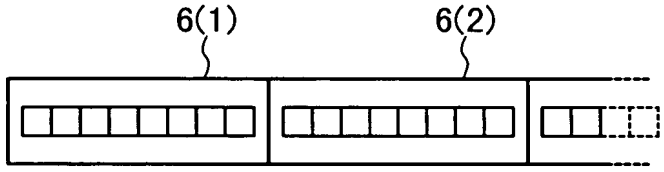



FIG.5(d)

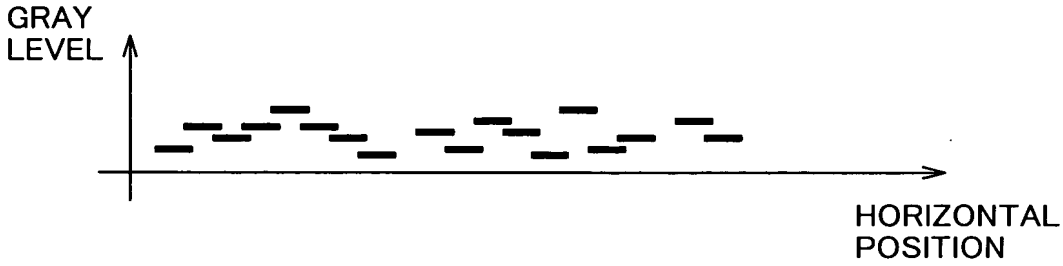



FIG.5(e)

FIG.6(a)

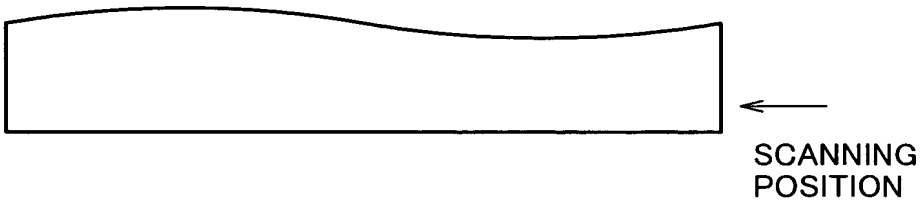



FIG.6(b)

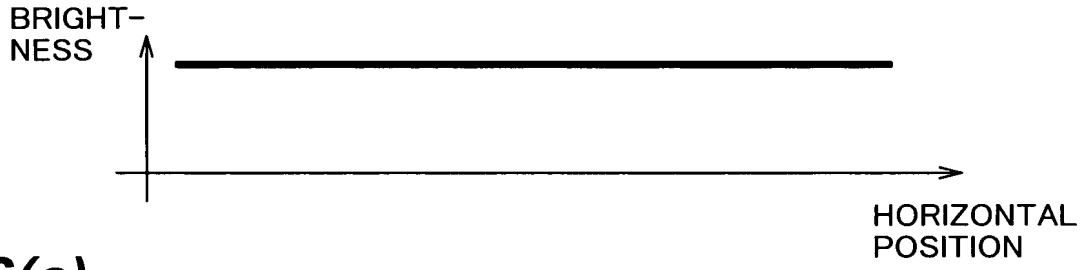



FIG.6(c)

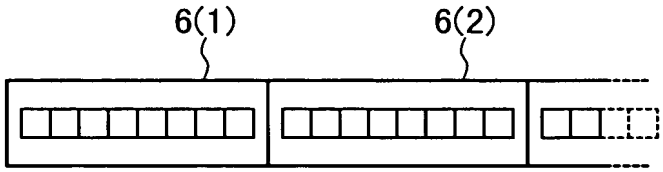



FIG.6(d)

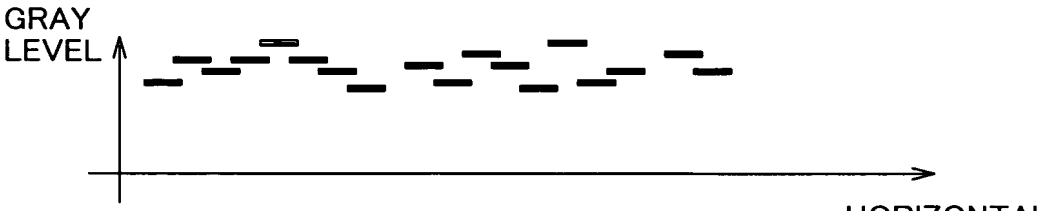



FIG.6(e)

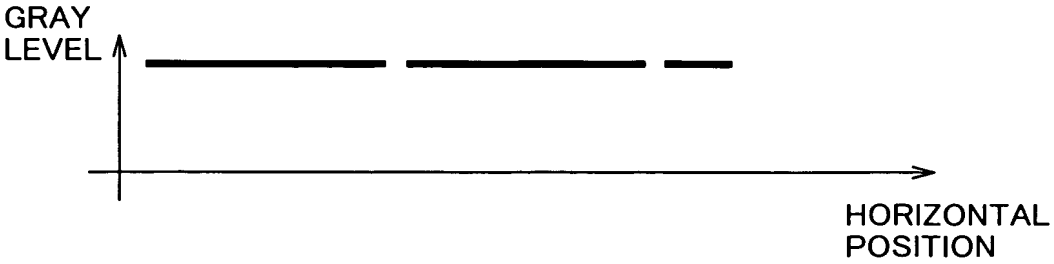


FIG.7

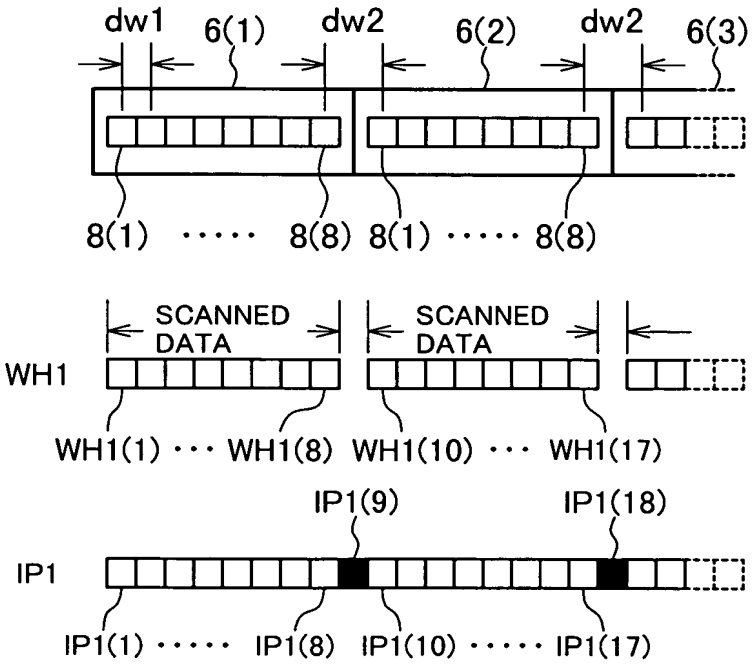

dw1
6(1)
dw2
6(2)
dw2
6(3)
8(1) ····· 8(8) 8(1) ····· 8(8)
SCANNED DATA
SCANNED DATA
WH1
WH1(1) ··· WH1(8) WH1(10) ··· WH1(17)
IP1(9)
IP1(18)
IP1
IP1(1) ····· IP1(8) IP1(10) ····· IP1(17)

FIG.8(a)

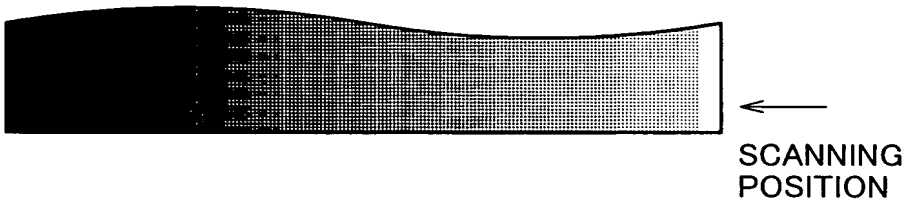



FIG.8(b)

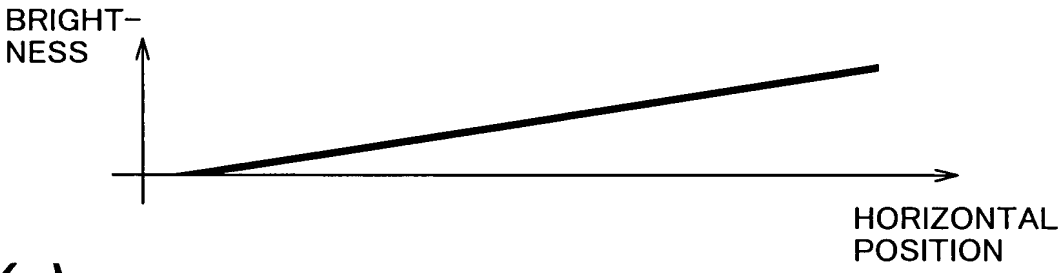



FIG.8(c)

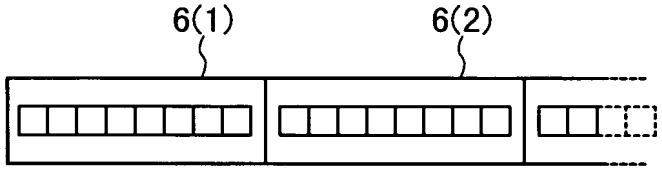



FIG.8(d)

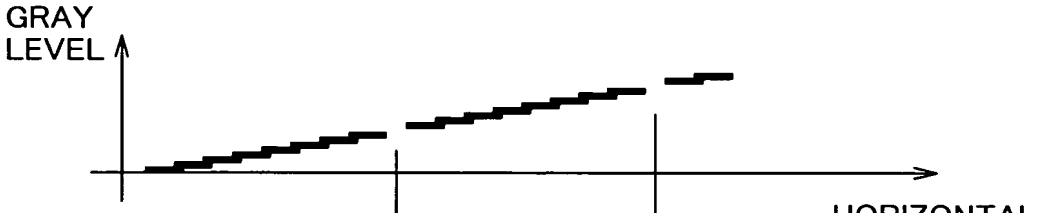



FIG.8(e)

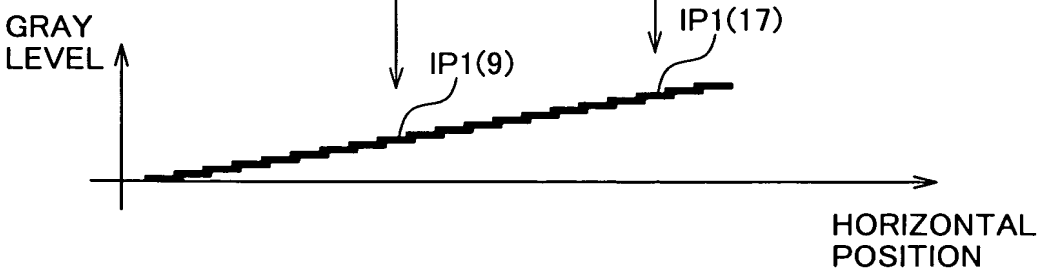


FIG.9

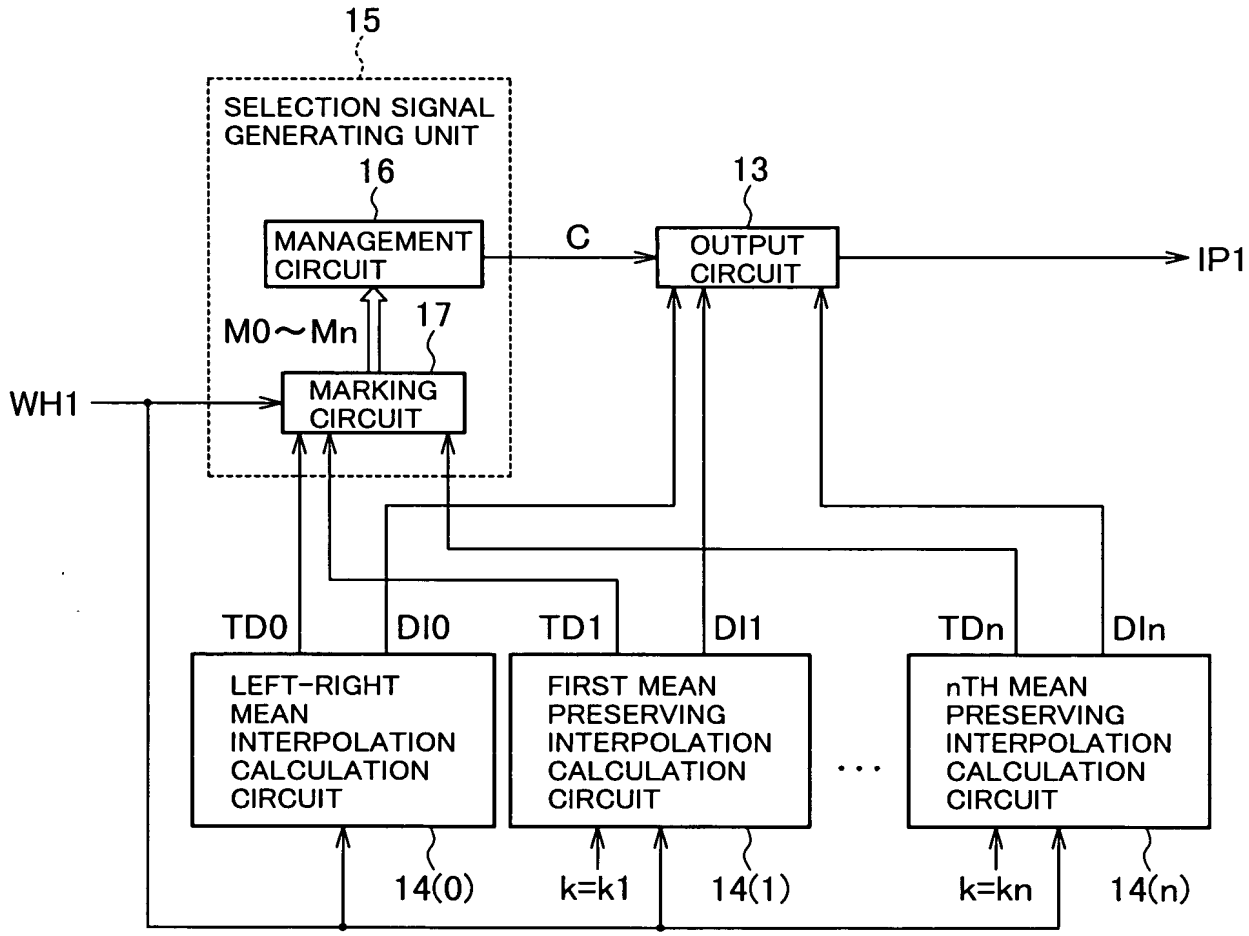

15
SELECTION SIGNAL GENERATING UNIT
16
MANAGEMENT CIRCUIT
C
13
OUTPUT CIRCUIT
IP1
M0～Mn
17
MARKING CIRCUIT
WH1
TD0
DI0
TD1
DI1
TDn
DIn
LEFT-RIGHT MEAN INTERPOLATION CALCULATION CIRCUIT
FIRST MEAN PRESERVING INTERPOLATION CALCULATION CIRCUIT
nTH MEAN PRESERVING INTERPOLATION CALCULATION CIRCUIT
14(0)
k=k1
14(1)
k=kn
14(n)

FIG.10(a)

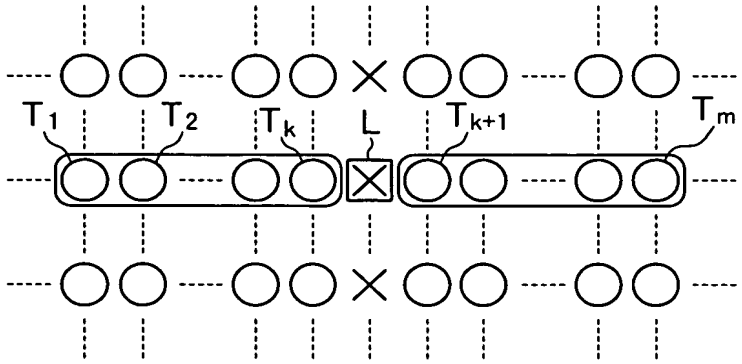



FIG.10(b)

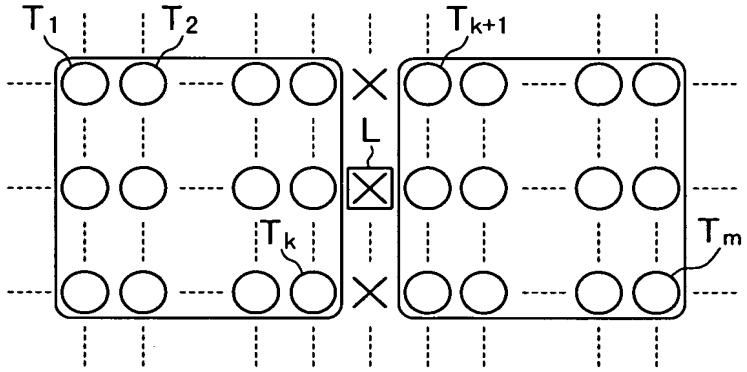



FIG.11

| | $T_1$ | $T_2$ | ····· | $T_m$ |
|---|---|---|---|---|
| LEFT-RIGHT MEAN INTERPOLATION CALCULATION CIRCUIT | $M0[T_1]$ | $M0[T_2]$ | ····· | $M0[T_m]$ |
| FIRST MEAN PRESERVING INTERPOLATION CALCULATION CIRCUIT | $M1[T_1]$ | $M1[T_2]$ | ····· | $M1[T_m]$ |
| ⋮ | ⋮ | ⋮ | | ⋮ |
| nTH MEAN PRESERVING INTERPOLATION CALCULATION CIRCUIT | $Mn[T_1]$ | $Mn[T_2]$ | ····· | $Mn[T_m]$ |

FIG.12

| | |
|---|---|
| LEFT-RIGHT MEAN INTERPOLATION CALCULATION CIRCUIT | S0 |
| FIRST MEAN PRESERVING INTERPOLATION CALCULATION CIRCUIT | S1 |
| ⋮ | ⋮ |
| nTH MEAN PRESERVING INTERPOLATION CALCULATION CIRCUIT | Sn |

FIG.13

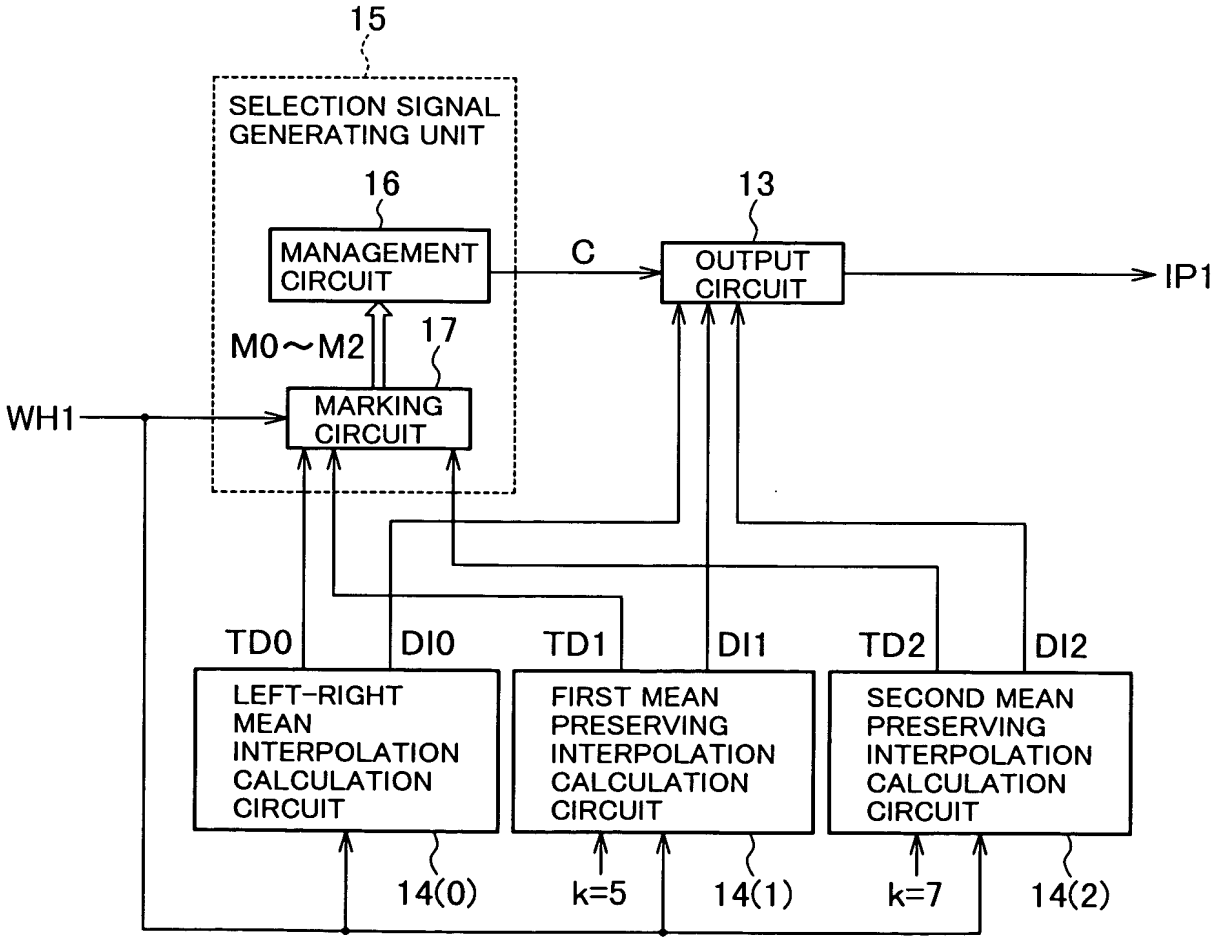


FIG.14(a)

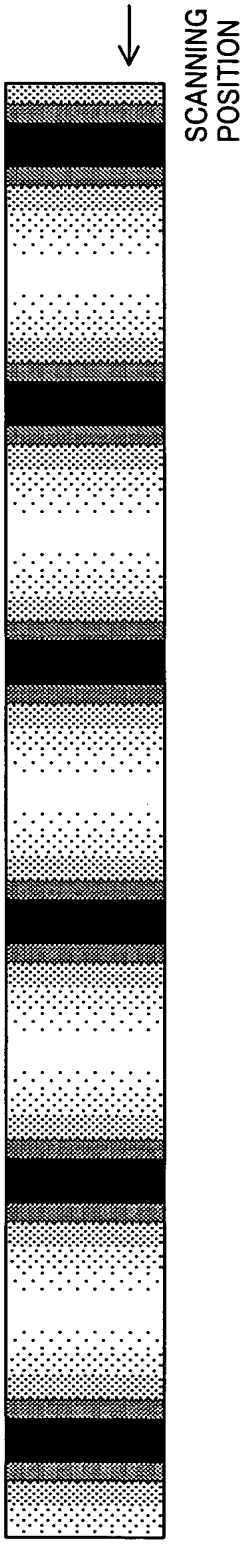



FIG.14(b)

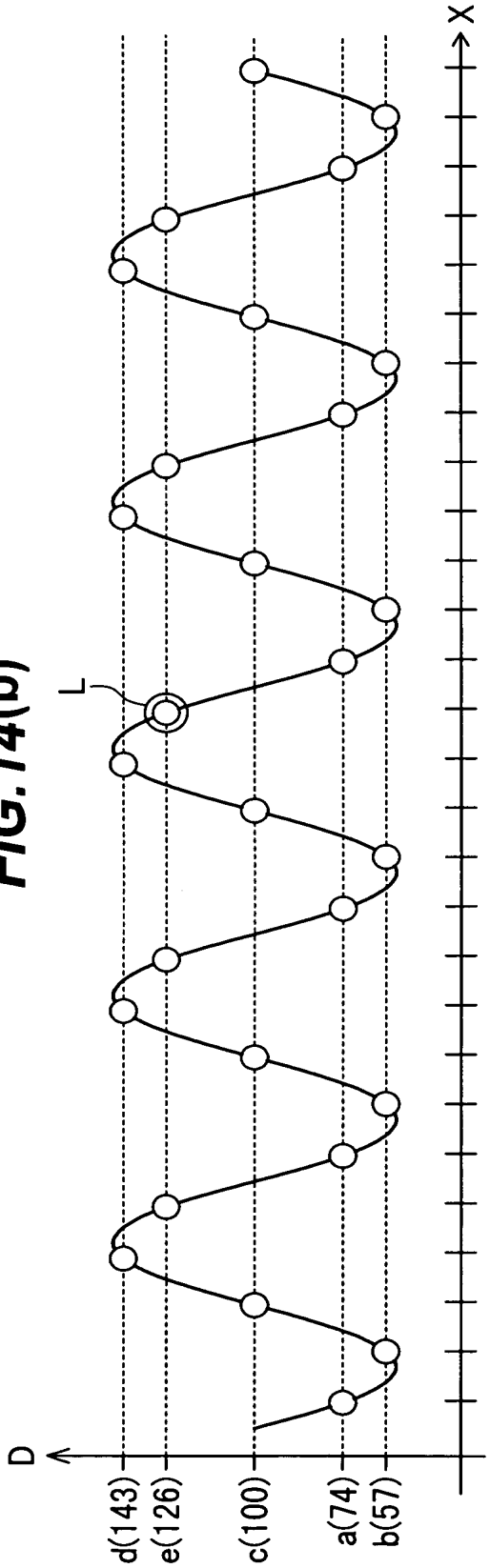
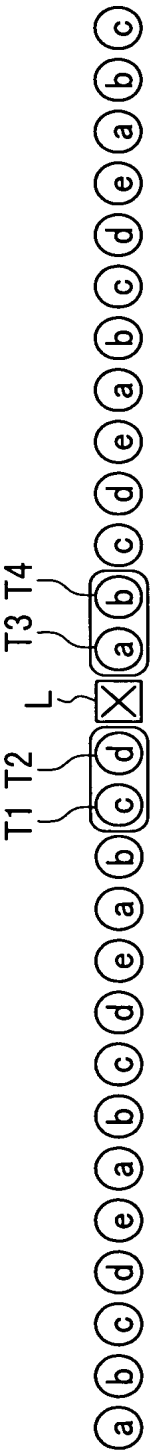



FIG.14(c)



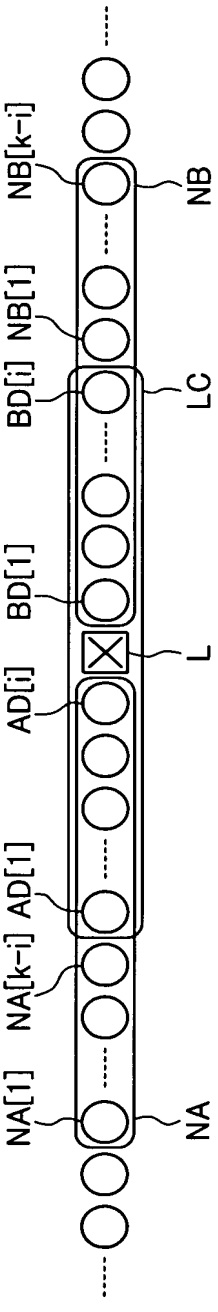



FIG.15(a)

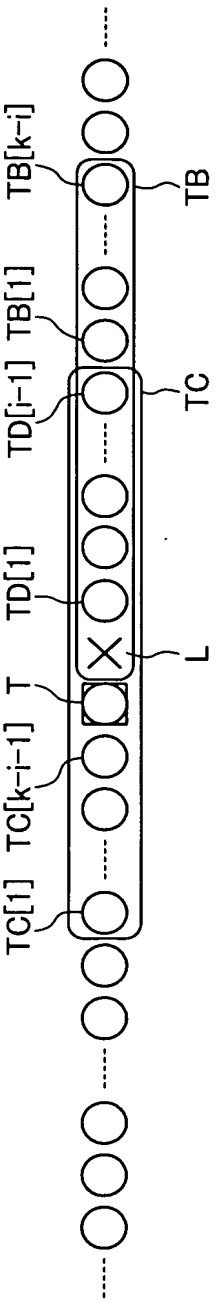



FIG.15(b)

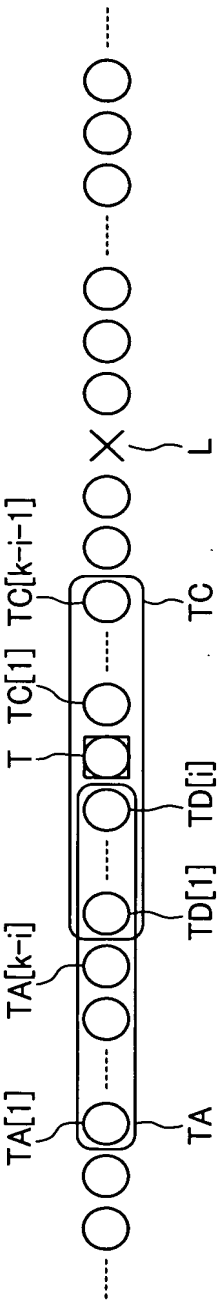



FIG.15(c)

**FIG.16(a)**

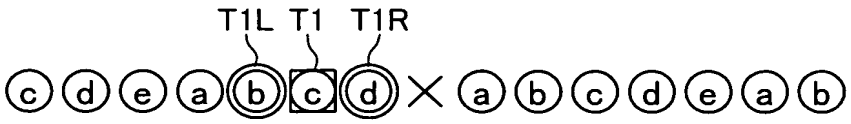



**FIG.16(b)**

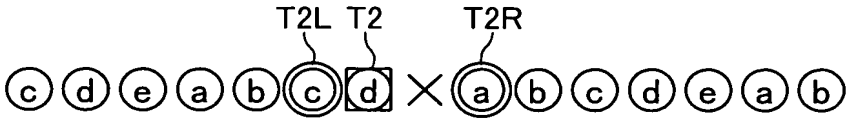



**FIG.16(c)**

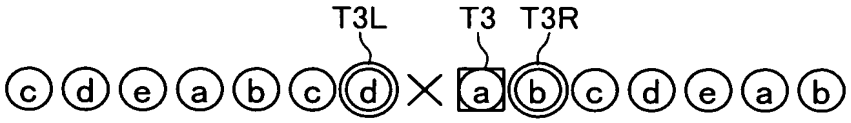



**FIG.16(d)**

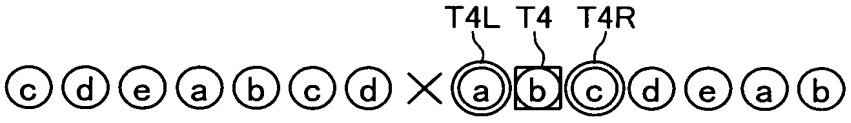



**FIG.16(e)**

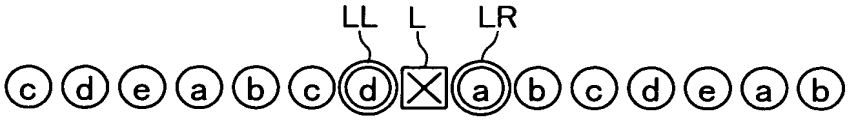


FIG.17(a)

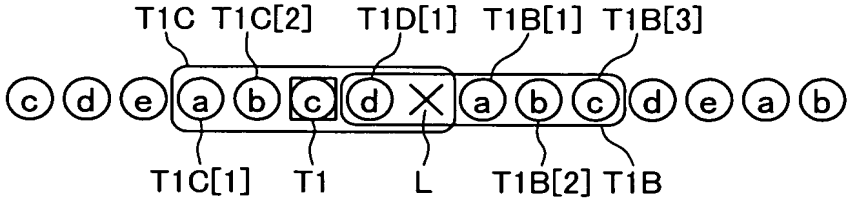



FIG.17(b)

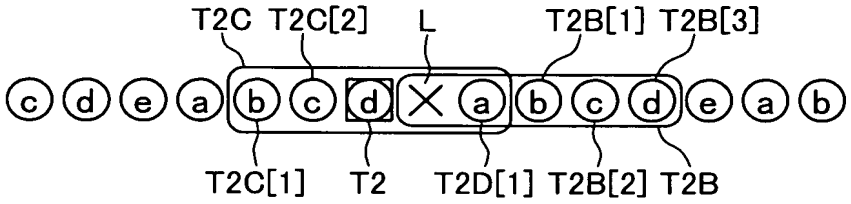



FIG.17(c)

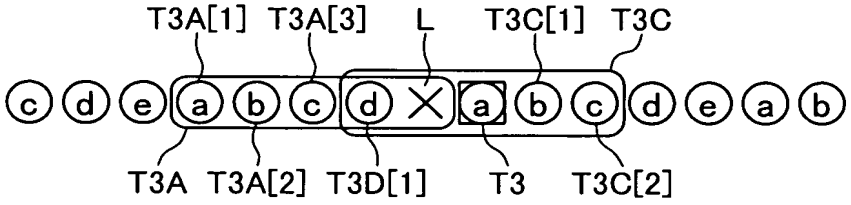



FIG.17(d)

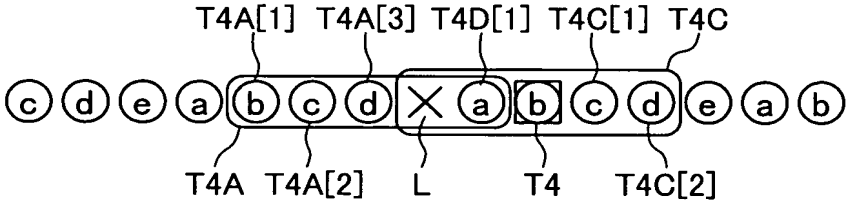



FIG.17(e)

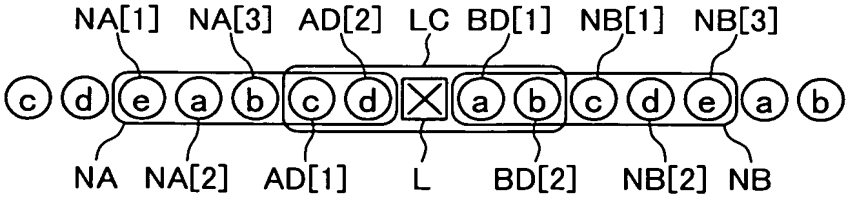


**FIG.18(a)**

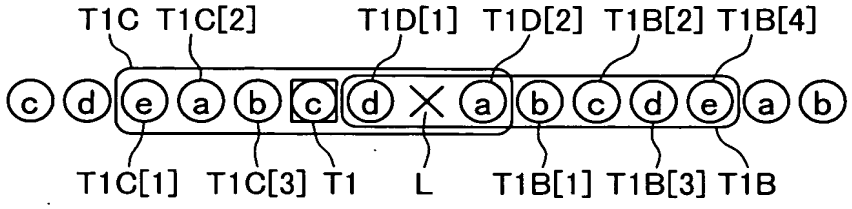



**FIG.18(b)**

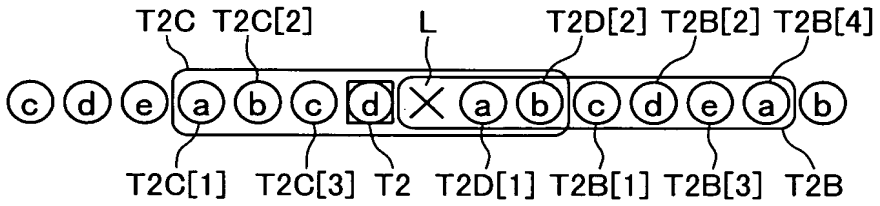



**FIG.18(c)**

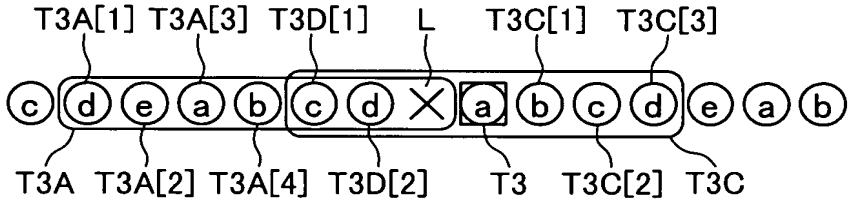



**FIG.18(d)**

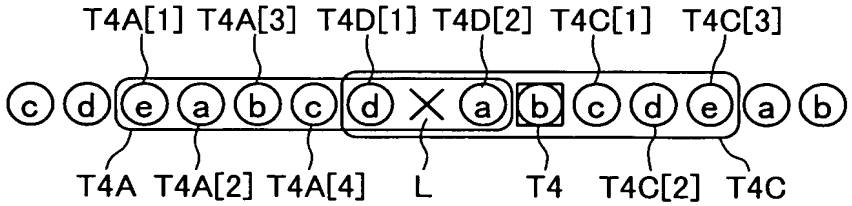



**FIG.18(e)**

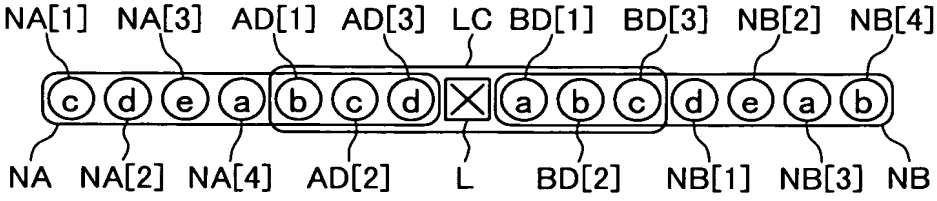


FIG.19

| | T1 | T2 | T3 | T4 |
|---|---|---|---|---|
| M0 | 0 | 56 | 26 | 30 |
| M1 | 0 | 0 | 0 | 0 |
| M2 | 69 | 69 | 26 | 69 |

FIG.20

| | |
|---|---|
| S0 | 112 |
| S1 | 0 |
| S2 | 233 |

FIG.21(a)

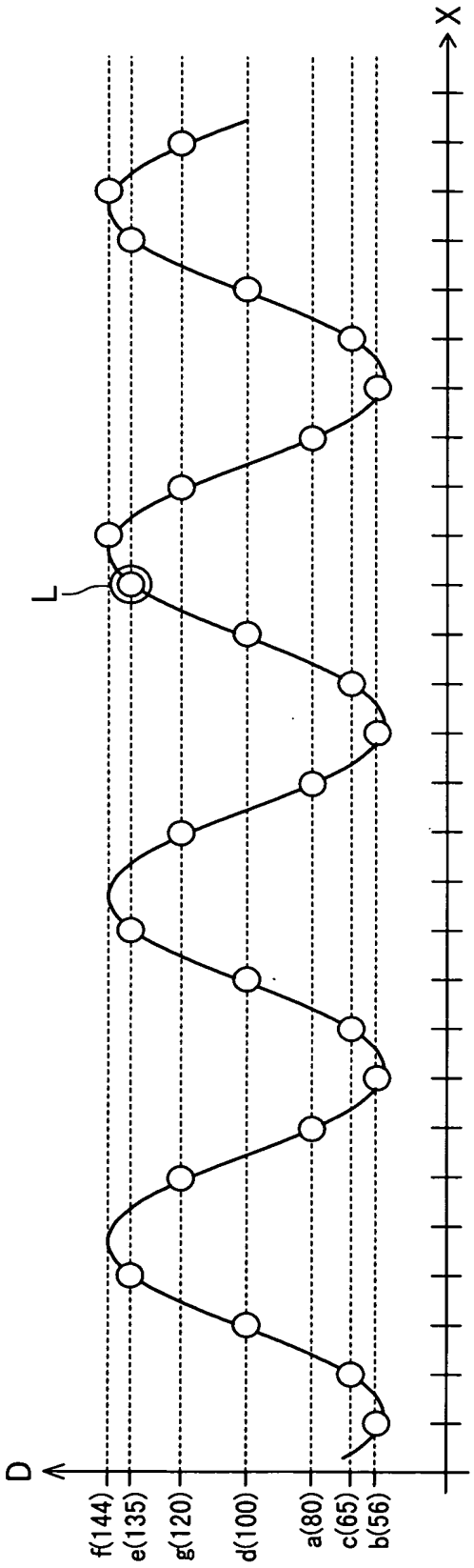



FIG.21(b)

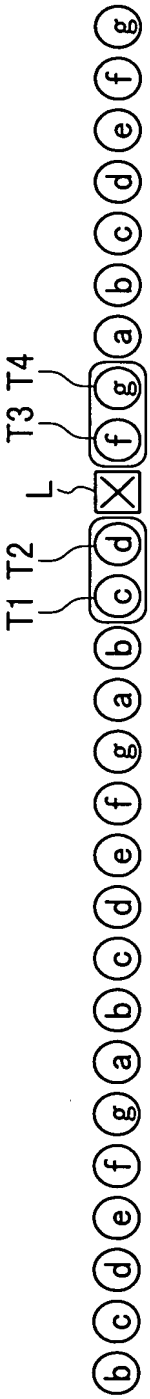


FIG.22

| | T1 | T2 | T3 | T4 |
|---|---|---|---|---|
| M0 | 13 | 4.5 | 71 | 8 |
| M1 | 143 | 35 | 143 | 35 |
| M2 | 0 | 0 | 0 | 0 |

FIG.23

| | |
|---|---|
| S0 | 96.5 |
| S1 | 356 |
| S2 | 0 |

FIG.24(a)

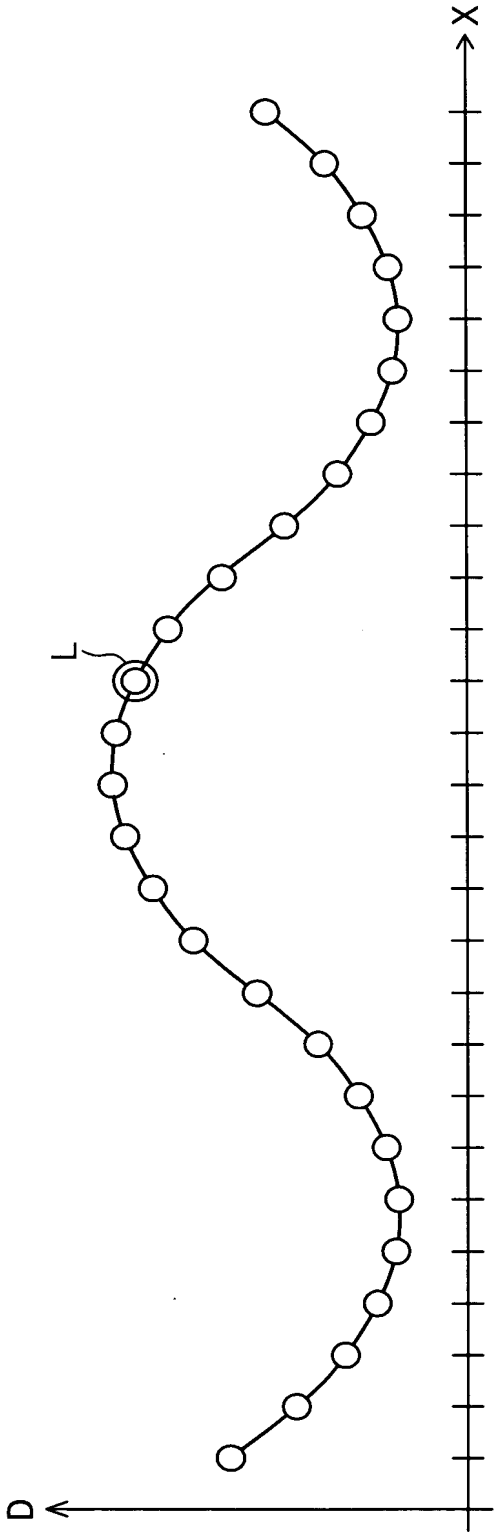



FIG.24(b)

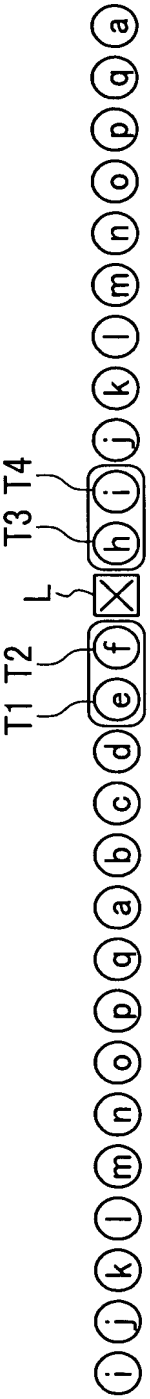


FIG.25

| | T1 | T2 | T3 | T4 |
|---|---|---|---|---|
| M0 | 3.5 | 8.5 | 1.5 | 0 |
| M1 | 91 | 152 | 91 | 152 |
| M2 | 191 | 269 | 86 | 191 |

FIG.26

| | |
|---|---|
| S0 | 13.5 |
| S1 | 486 |
| S2 | 737 |

FIG.27

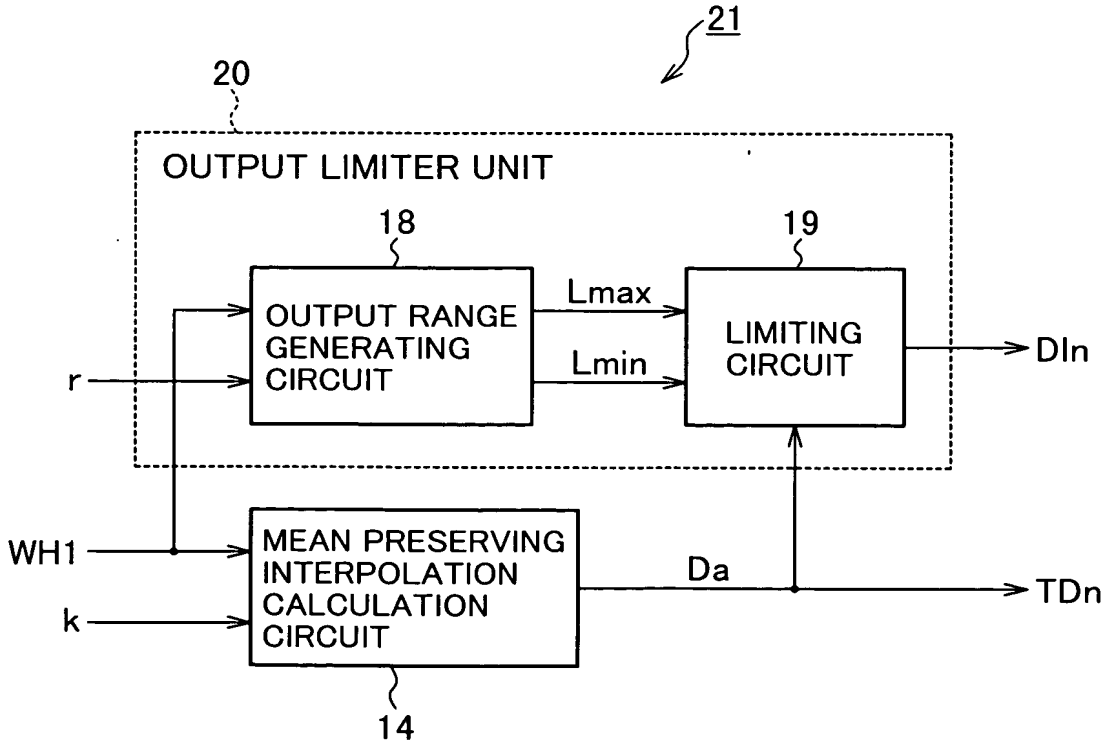


FIG.28

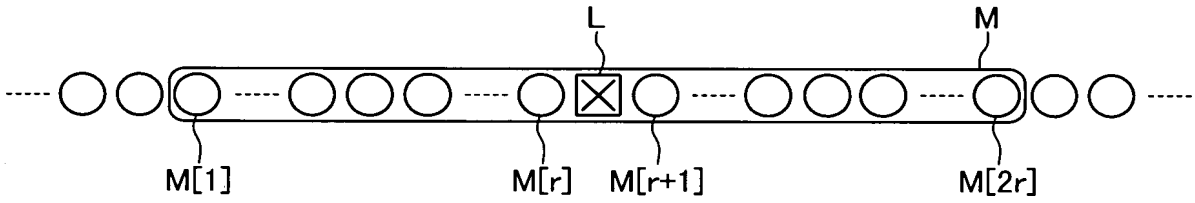


FIG.29

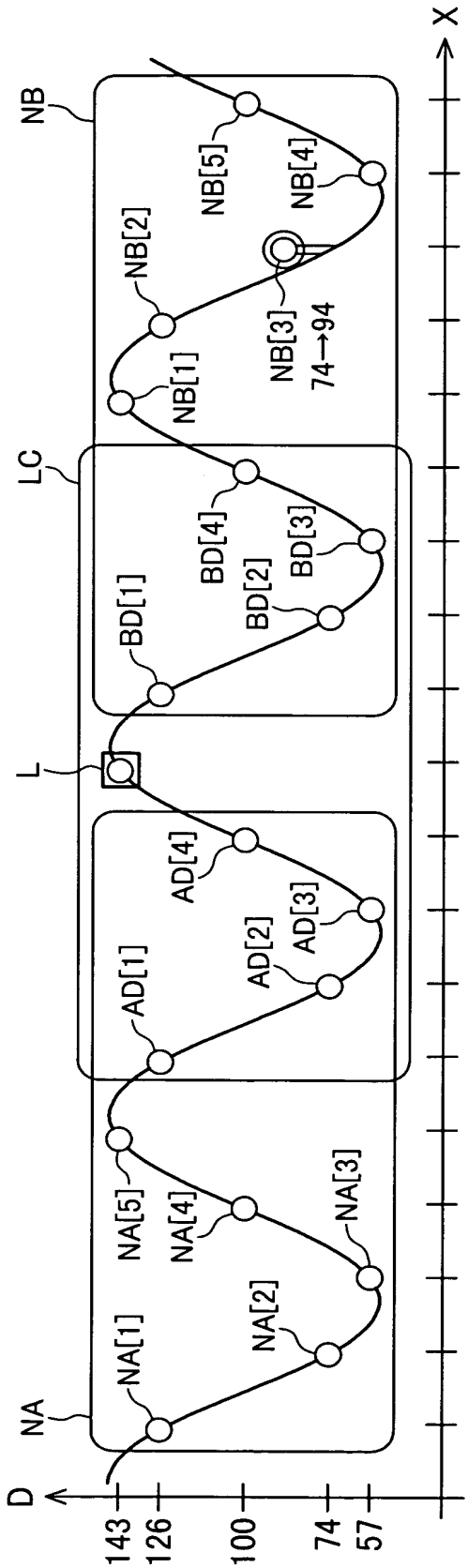

X
NB
LC
L
NA
D
143
126
100
74
57
NB[1]
NB[2]
NB[3]
74→94
NB[4]
NB[5]
BD[1]
BD[2]
BD[3]
BD[4]
AD[1]
AD[2]
AD[3]
AD[4]
NA[1]
NA[2]
NA[3]
NA[4]
NA[5]

FIG.30

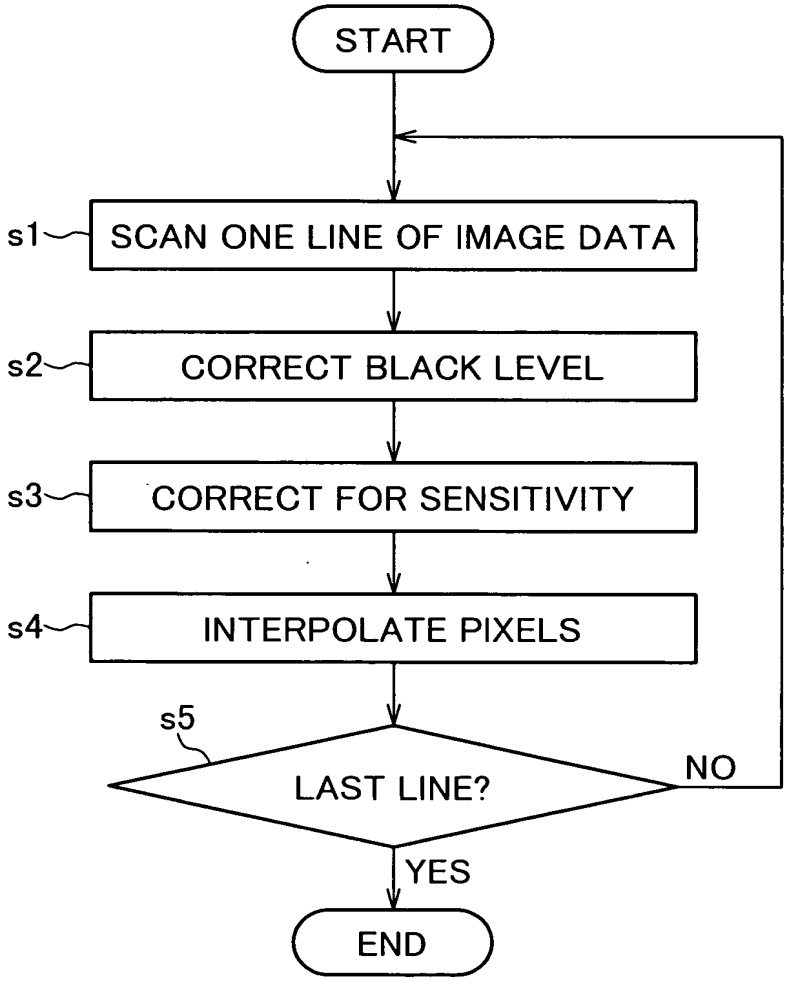

START
s1
SCAN ONE LINE OF IMAGE DATA
s2
CORRECT BLACK LEVEL
s3
CORRECT FOR SENSITIVITY
s4
INTERPOLATE PIXELS
s5
LAST LINE?
NO
YES
END

FIG.31

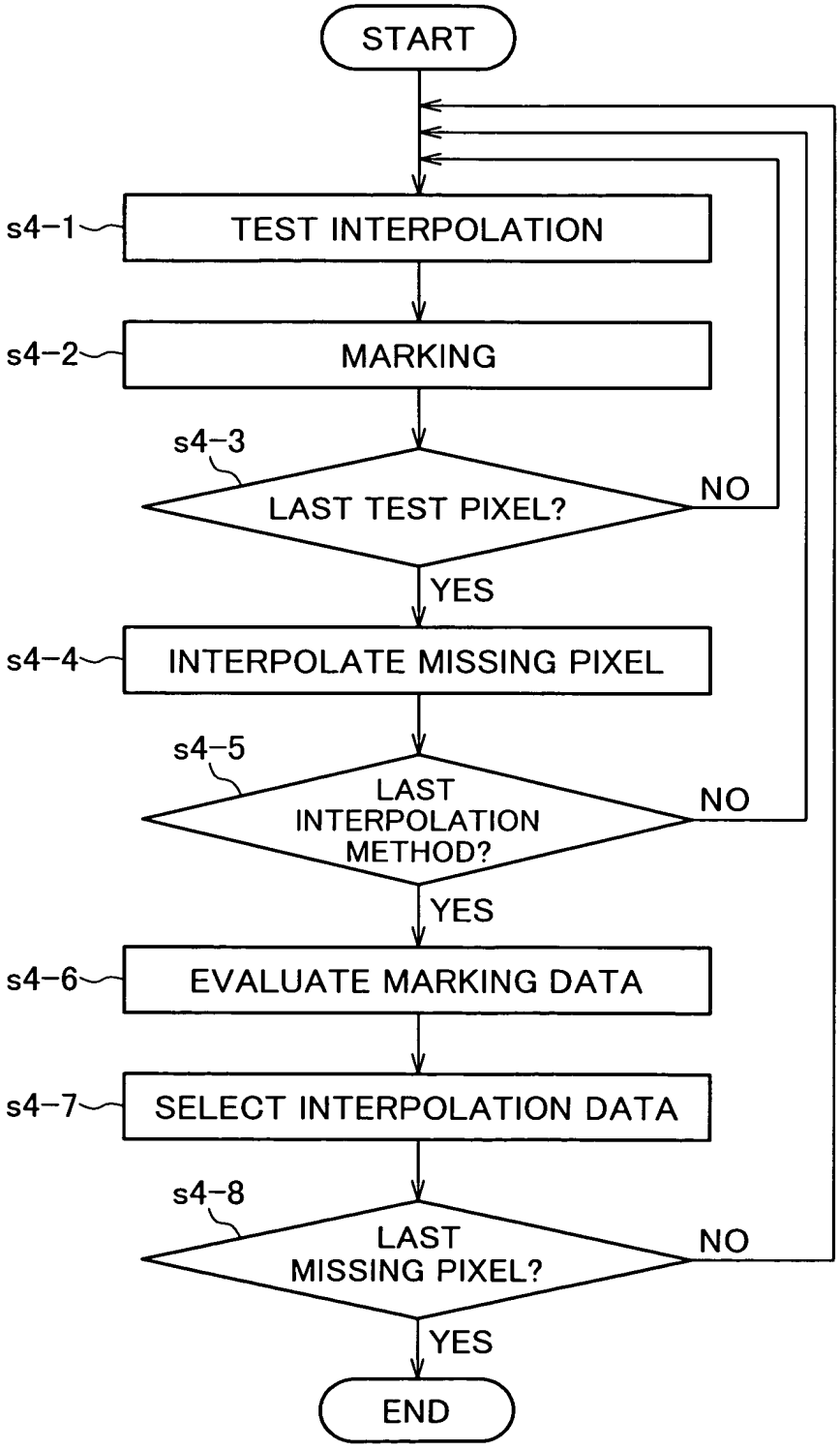

START
s4-1
TEST INTERPOLATION
s4-2
MARKING
s4-3
LAST TEST PIXEL?
NO
YES
s4-4
INTERPOLATE MISSING PIXEL
s4-5
LAST INTERPOLATION METHOD?
NO
YES
s4-6
EVALUATE MARKING DATA
s4-7
SELECT INTERPOLATION DATA
s4-8
LAST MISSING PIXEL?
NO
YES
END

FIG.32

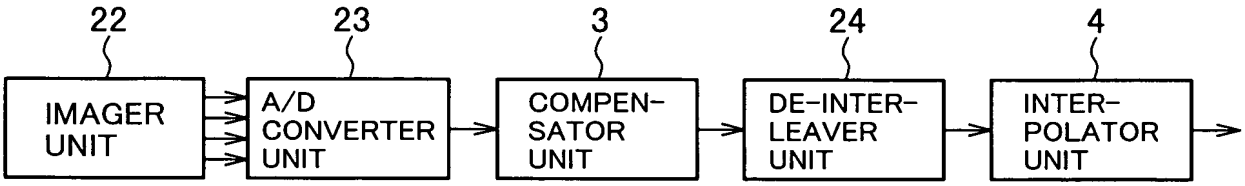

22
23
3
24
4
IMAGER UNIT
A/D CONVERTER UNIT
COMPEN-SATOR UNIT
DE-INTER-LEAVER UNIT
INTER-POLATOR UNIT

FIG.33

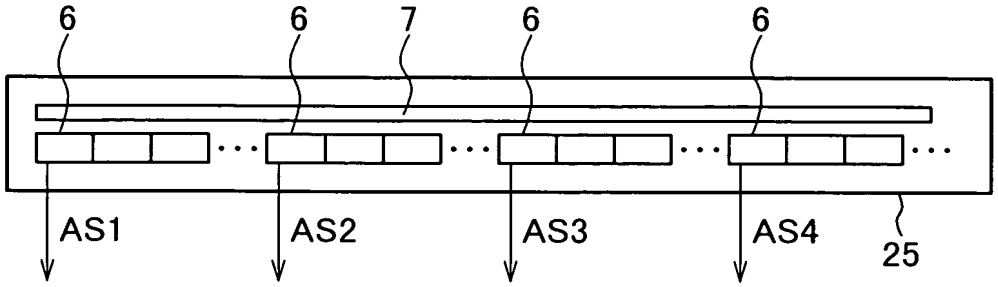

6
6
7
6
6
AS1
AS2
AS3
AS4
25

FIG.34

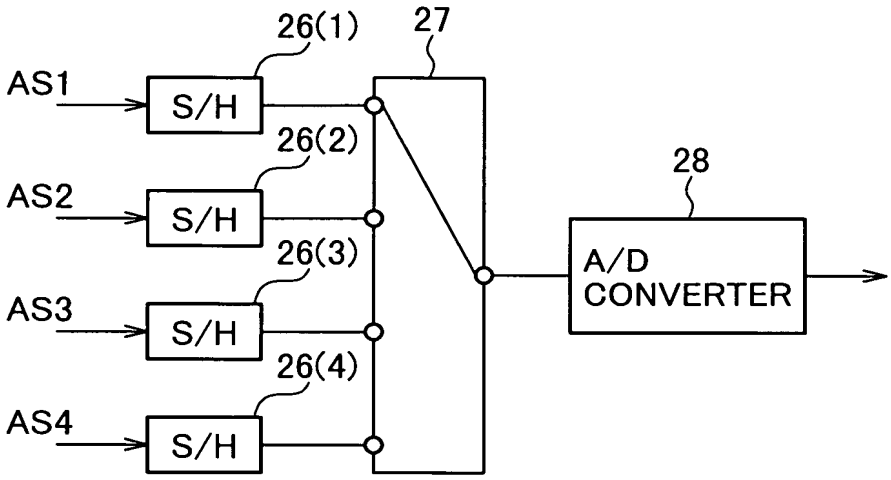

26(1)
27
AS1
S/H
26(2)
AS2
S/H
28
26(3)
A/D
CONVERTER
AS3
S/H
26(4)
AS4
S/H

FIG.35

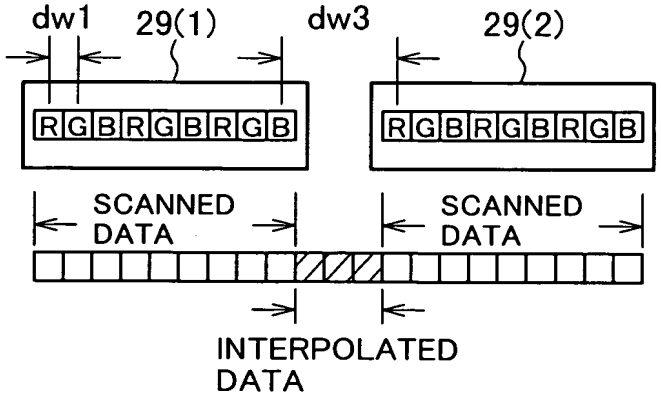

dw1
29(1)
dw3
29(2)
R G B R G B R G B
R G B R G B R G B
SCANNED DATA
SCANNED DATA
INTERPOLATED DATA

FIG.36

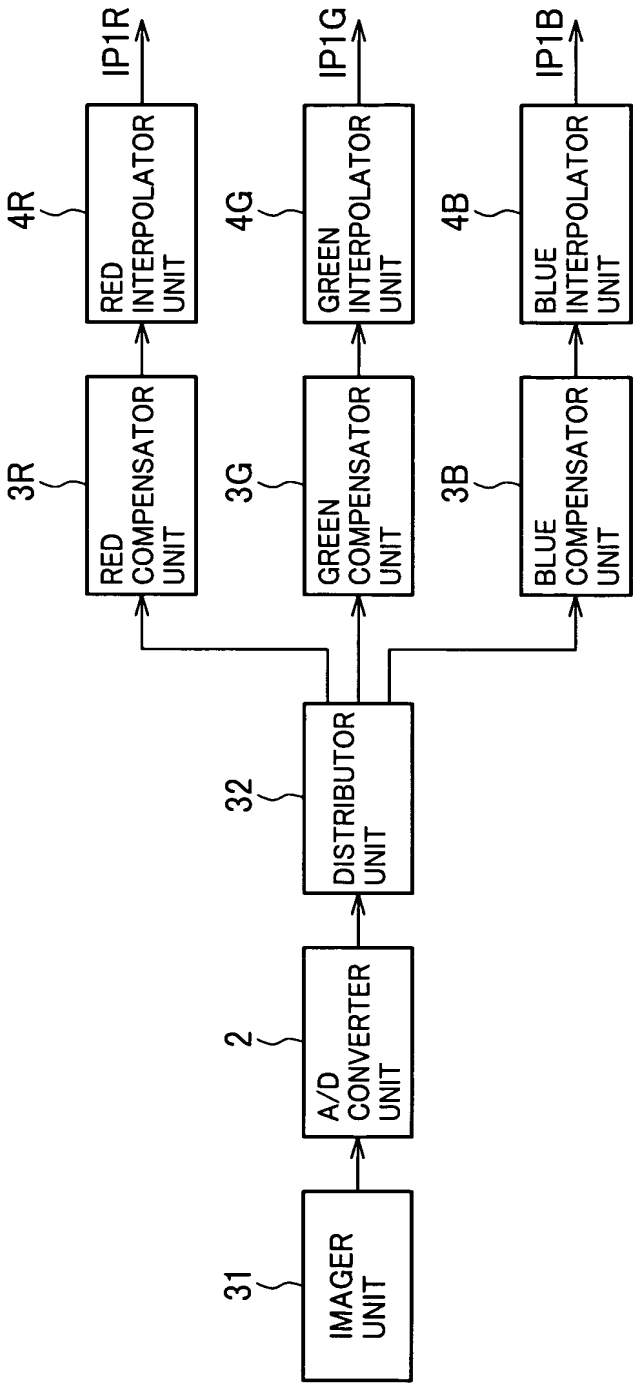

IMAGER UNIT
31
A/D CONVERTER UNIT
2
DISTRIBUTOR UNIT
32
RED COMPENSATOR UNIT
3R
GREEN COMPENSATOR UNIT
3G
BLUE COMPENSATOR UNIT
3B
RED INTERPOLATOR UNIT
4R
GREEN INTERPOLATOR UNIT
4G
BLUE INTERPOLATOR UNIT
4B
IP1R
IP1G
IP1B

FIG.37

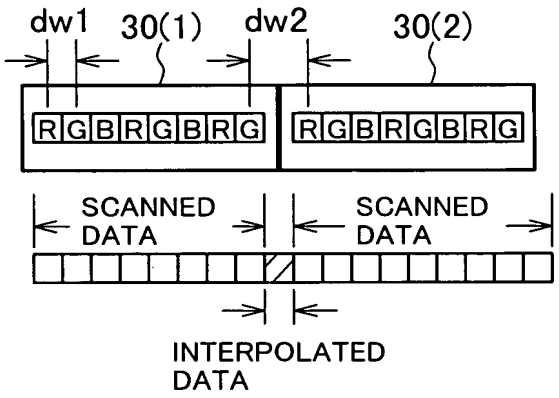
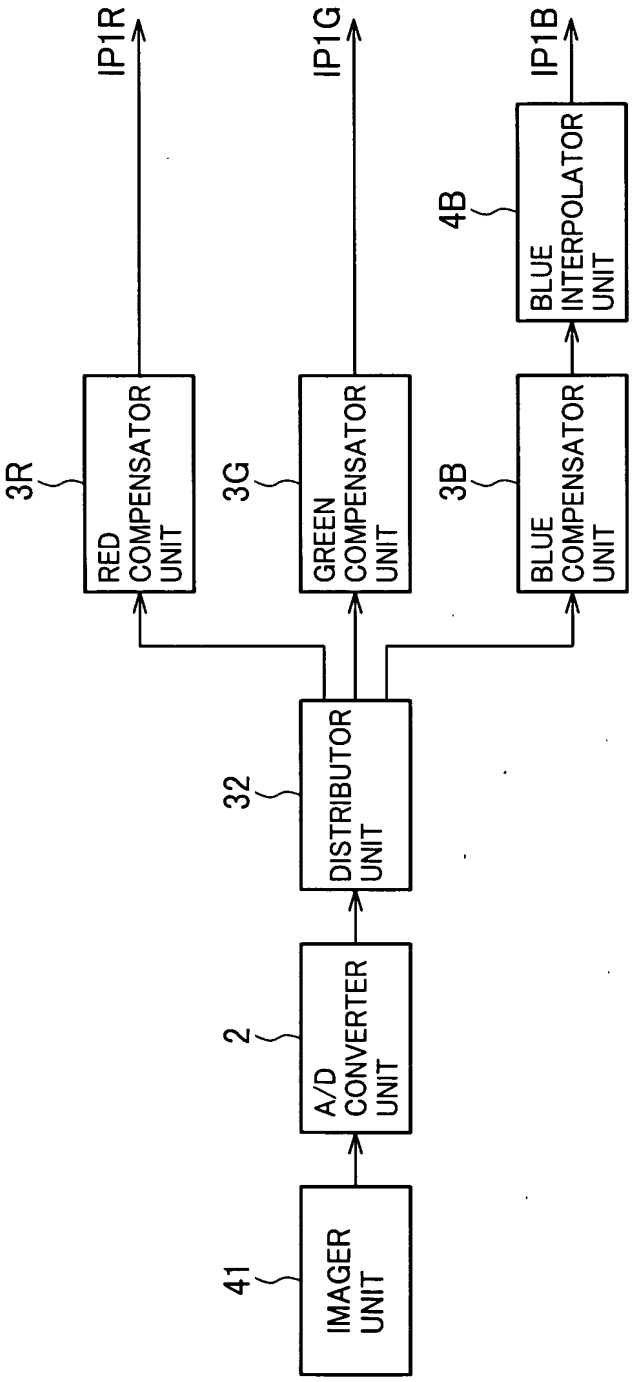

dw1
30(1)
dw2
30(2)
R G B R G B R G
R G B R G B R G
SCANNED DATA
SCANNED DATA
INTERPOLATED DATA

FIG.38


IP1R
IP1G
IP1B
4B
BLUE INTERPOLATOR UNIT
3R
RED COMPENSATOR UNIT
3G
GREEN COMPENSATOR UNIT
3B
BLUE COMPENSATOR UNIT
32
DISTRIBUTOR UNIT
2
A/D CONVERTER UNIT
41
IMAGER UNIT